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## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
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in its capacity as elected Office

Date of mailing (day/month/year) 16 February 2001 (16.02.01)	
International application No. PCT/GB00/02277	Applicant's or agent's file reference WPP80667
International filing date (day/month/year) 13 June 2000 (13.06.00)	Priority date (day/month/year) 15 June 1999 (15.06.99)
Applicant BROWN, David, John, Bowes	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

15 January 2001 (15.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

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The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Pascal Piriou
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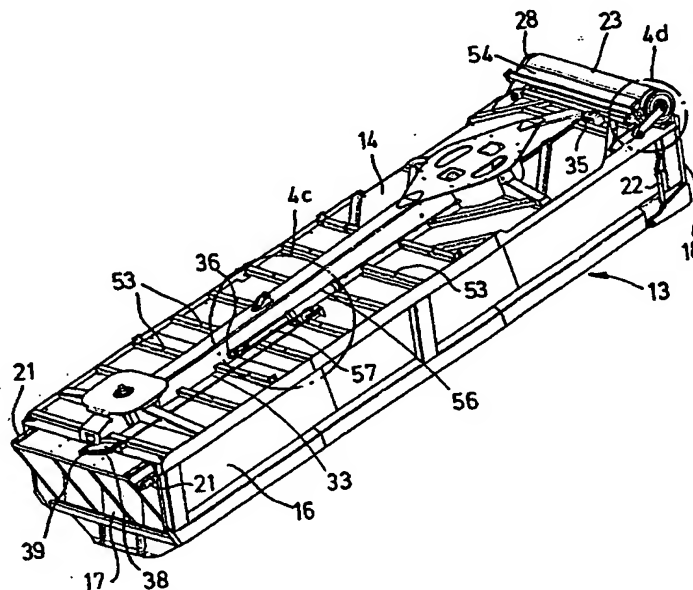
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Published:

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **LOAD CARRYING BODY**



(57) Abstract: A floor constituted by a flexible belt (23), resting on the upper surface of a loadbearing base, has one end connected to a headboard (17) and the other end connected to a winch (28). A cable (33) has one end connected to the headboard and the other end connected to the winch. A guide system for the cable including a compensating mechanism (36, 56, 57) which varies the path of the cable during rotation of the winch, so as to compensate for a difference between the belt diameter and the cable diameter on the winch, the difference varying as the belt is wound and unwound.

WO 00/76806 A1

### LOAD CARRYING BODY

This invention relates to a load carrying body for a vehicle, in particular for the purpose of facilitating the unloading of material.

Conventionally, material such as earth, stones, rock, coal, or refuse is unloaded from a tipping body, in a manner which is difficult to control.

Ejector bodies are known in which material is pushed out of the body without tipping the body.

Such systems cannot deal with a variety of loads and body lengths.

The present invention provides a load carrying body with a flexible floor which is winched out of the rear end portion of the body.

Preferred features of the load carrying body are set forth in the claims.

The invention will be described further, by way of example only, with reference to the accompanying drawings.

In the accompanying drawings:

Figure 1 is a partial side view of an articulated vehicle having a trailer with a load carrying body in accordance with the invention, carrying a full load;

Figure 2 is a view similar to Figure 1, but with the load partly ejected;

Figure 3 is a view similar to Figure 1, but with the load fully ejected;

Figure 4a is a perspective view of the body, corresponding to Figure 1;

Figure 4b is a perspective view of the inverted body, corresponding to Figure 4a;

Figure 4c is an enlargement of detail 4c in Figure 4b;

Figure 4d is an enlargement of detail 4d in Figure 4b;

Figures 5a - d are similar to Figures 4a - d, but corresponding to Figure 2;

Figures 6a - d are similar to Figures 4a - d, but corresponding to Figure 3;

Figure 7 is an axial section through a winch and its mounting to the base of the load carrying body;

Figure 8 is a perspective view from below, showing one end part of a belt and the winch;

Figure 9 is a perspective view from below, showing the other end part of the belt and a headboard;

Figure 10 is an enlarged section through a connection between the belt and the headboard; and

Figure 11 is a diagram of a hydraulic circuit of the vehicle.

The articulated vehicle illustrated in Figure 1 comprises a tractor unit 11, including a cab and an internal combustion engine (not shown), and a trailer 12, including a load carrying body or ejector body 13 which has a base 14, fixed sidewalls 16, a movable transverse member or headboard 17 at the front end, and an upwardly swingable tailgate 18 at the rear end. As shown in Figure 1, the body 13 is in an initial fully-laden condition and contains loose material 19 such as sand or aggregate.

The headboard 17 is movable along the upper surface of the base 14 between a front position (Figures 1, 4a, and 4b) and a rear position (Figures 3, 6a, and 6b). It has wear pads 21 which run against the upper surface of the base 14 and the inner surfaces

of the sidewalls 16. The tailgate 18 is self-locking and, when unlocked, can be opened by means of hydraulic rams 22 or alternatively by the material 19 as it is ejected.

The floor of the load space between the headboard 17 and the rear end of the body 13 is constituted by a flexible belt 23 which rests on the substantially flat approximately horizontal upper surface of the base 14 and occupies the full width of the load space between the sidewalls 16. The belt is made of a hard wearing non-stretchable material, such as that used for conveyor belts in mining installations, for example. The front end of the belt 23 is releasably connected to the underside of the headboard 17 as shown in Figures 9 and 10. A transverse series of projections 24 provided in the form of circular annular steel discs cross-welded to a bottom wall of the headboard 17. The projections 24 fit in corresponding holes 26, e.g. 50 mm in diameter, in the end portion of the belt 23, the belt being retained by bolts 27. The other end of the belt 23 passes over the rear end of the base 14 and is connected to a winch 28 lying below the level of the upper surface of the base 14.

The winch comprises a drum 29 having a hollow cylindrical peripheral wall 31 which extends over the full width of the load space and on which the belt 23 is wound. The outer surface of the cylindrical wall 31 is provided with a series of projections 24 (as described above) which fit in a series of holes 26 (as described above) provided in the adjacent end of the belt 23 (Figure 8).

One end of the drum 29 is constituted by a sheave 32 on which is wound a cable 33 in the form of a steel wire rope, for example. The cable 33 is guided along a path as shown in the drawings by a guide system comprising rotatable guide elements or pulleys 34 to 39 and is connected to a lug 41 on the headboard 17 at a position substantially on the centre-line of the body 13.

The winch 28 has a reversible hydraulic motor 42 mounted in an annular frame 43 freely fitted in the end of the drum 29 opposite to the end closed by the sheave 32, which is mounted on an axle 44 by bearings 46 within the drum 29 and thereby kept out

of contact with the loose material. The hydraulic motor 42 drives reduction gearing 47 bolted to the inside of the cylindrical wall 31 of the drum 29. The drum rotates about a horizontal axis 48 which extends transversely to the centre-line of the body 13 and which is defined by the bearings 46 and bearings (not shown) within the reduction gearing 47. The frame 43 and the axle 44 are fixed to perspective pivot arms 49 mounted on respective pivots 51 which are in turn mounted on flanges 52 fixed to the base 14.

To unload the fully laden trailer 12, the tailgate 18 is raised by means of the hydraulic rams 22 and the hydraulic motor 42 is operated to drive the drum 29 of the winch 28 in the clockwise direction as viewed in Figure 1. The belt 23 is wound on to the winch, thereby drawing the floor of the load space towards the rear end of the base 14. The belt 23 thus carries the loose material 19 out of the rear end of the body 13 and deposits it as a gradually rising heap behind the trailer 12, as shown in Figures 2 and 3. The headboard 17, which is drawn along with the belt 23, merely serves to prevent forward spillage. Compressed air (or another fluid under pressure) can be injected under the floor in order to reduce friction between the belt 23 and the upper surface of the base 14, which may be of steel or aluminium, for example. The supply of compressed air may be discontinued after the floor has started to move or may be continued until the load has been completely discharged. Compressed air injection orifices 53 are provided in an array extending along and across the base and can be connected to piping (not shown) communicating with a compressor (not shown) driven by the engine of the vehicle. Loose material adhering to the surface of the belt 23 is removed by a spring-loaded scraper 54 which bears against the outer surface of the belt as it is wound on and off the winch.

As the winch 28 rotates in the clockwise direction and takes up the belt 23 on the drum 29, the sheave 32 pays out the cable 33 so that the headboard 17 is free to be drawn along the body 13 by the belt 23. When the motor 42 is reversed, the winch drum 29 pays out the belt 23 while the cable 33 is wound on to the sheave 32, thereby causing the cable to draw the headboard 17 (and with it the belt 23) towards the front end of the

base 14. It will be appreciated that the belt diameter on the drum 29 will normally differ from the cable diameter on the sheave 32. In particular, as the belt is wound on the drum, the belt diameter will gradually increase. On the other hand, since the turns of cable on the sheave 32 will normally lie next to one another, the cable diameter on the sheave will remain approximately constant. In order to compensate for the varying difference between the belt diameter and the cable diameter on the winch, the guide system for the cable 33 includes a compensating mechanism which varies the path of the cable during rotation of the winch 28. The compensating mechanism comprises a hydraulic cylinder 56 which drives a piston 57 carrying the pulley 36, around which the cable 33 turns through 180°. The hydraulic cylinder 56 is hydraulically linked to the hydraulic circuit of the motor 42, as shown in Figure 11, so that the hydraulic pressure in the cylinder 56 is controlled to maintain the tension in the cable 33 approximately constant.

Referring to Figure 11 in more detail, a hydraulic pump 58 is driven by a power take off from the engine of the vehicle, and the supply of hydraulic fluid from the pump 58 to the hydraulic motor 42 is controlled by a directional control valve 59, which is shown in the "off" position and which has two "on" positions for driving the motor 42 (and hence the winch 28) in opposite directions. The supply of hydraulic fluid pressure to the cylinder 56 is controlled by two valves 61,62. The control valve 61 is effective to control the cable tension as the cable 33 is unwound from the winch during the ejection of the loose material, and the control valve 62 is effective to control the cable tension during the winding of the cable 33 on to the winch 28 during retraction of the headboard 17 towards the front end of the load carrying body 13. The control valves 61,62 act in such a way as to keep the pressure acting on the piston 57 substantially constant. Thus, slackness in the cable 33 and in the belt 23 is avoided during the unloading of the loose material and the paying off of the belt from the winch.



During use, the wear on the belt 23 is uneven, gradually increasing from the end connected to the winch drum 29 towards the end connected to the headboard 17. The above-described connection of the belt ends to the drum and the headboard by means of the projections 24 and holes 26 provides the advantage that the worn belt can be turned round end to end in order to increase its useful life.

The ejection and retraction times are equal and typically can be set at 500 mm/s, which equates to 16 seconds for a load space 8 m long. The loose material can be ejected with the vehicle stationary or moving forwards or in reverse. It is easy to control ejection of only a portion of the loose material. The use of the body 13 is not restricted to the carrying of loose material, since the movable floor can assist in the loading and unloading of rigid loads such as palletised loads, for example, in conjunction with a fork lift truck or telescopic material handler.

**CLAIMS:**

1. A load carrying body for a vehicle, comprising:

- (a) a load-bearing base having front and rear ends;
- (b) a transverse member which is movable along the upper surface of the base between a front position and a rear position;
- (c) a reversible winch mounted to the base, the winch lying below the level of the upper surface of the base;
- (d) a floor constituted by a flexible belt which rests on the upper surface of the base, a first end of the belt being connected to the transverse member and a second, opposite end of the belt being connected to the winch so that rotation of the winch in a first direction winds the belt on to the winch, thereby drawing the floor and with it the transverse member towards the rear end of the base, and rotation of the winch in a second, opposite direction pays out the wound belt from the winch;
- (e) a cable having one end connected to the transverse member and the other end connected to the winch so that rotation of the winch in the said second direction winds the cable on to the winch; and
- (f) a guide system which guides the cable along a path such that rotation of the winch in the said second direction causes the cable to draw the transverse member and with it the floor towards the front end of the base, the guide system including a compensating mechanism which varies the path of the cable during rotation of the winch, so as to compensate for a difference between the belt diameter on the winch and the cable diameter on the winch, the difference varying as the belt is wound and unwound.

2. A load carrying body as claimed in claim 1, in which the winch is mounted so as to be pivotable relative to the base about a transverse pivot axis parallel to the winch axis.
3. A load carrying body as claimed in claim 1 or 2, in which the winch comprises a drum around which the belt is wound, one end of the drum constituting a sheave around which the cable is wound.
4. A load carrying body as claimed in claim 3, in which the winch includes a hydraulic motor at the other end of the drum.
5. A load carrying body as claimed in claim 4, in which the hydraulic motor drives the drum via reduction gearing within the drum.
6. A load carrying body as claimed in any of claims 3 to 6, in which the drum rotates about bearings within the drum.
7. A load carrying body as claimed in any preceding claim, in which the belt is releasably connected to the transverse member and to the winch so that the belt can be turned round end-to-end.
8. A load carrying body as claimed in claim 7, in which each end of the belt has a transverse series of holes which receive corresponding projections provided on the transverse member and the winch respectively.
9. A load carrying body as claimed in any preceding claim, including a scraper which bears against the outer surface of the belt as it is wound on and off the winch.

10. A load carrying body as claimed in any preceding claim, in which the compensating mechanism comprises a guide element around which the cable turns along the said path and a piston-and-cylinder device for moving the guide element to vary the said path.

11. A load carrying body as claimed in any preceding claim, in which the base has orifices for injecting fluid under pressure between the floor and the base in order to reduce friction.

1/11

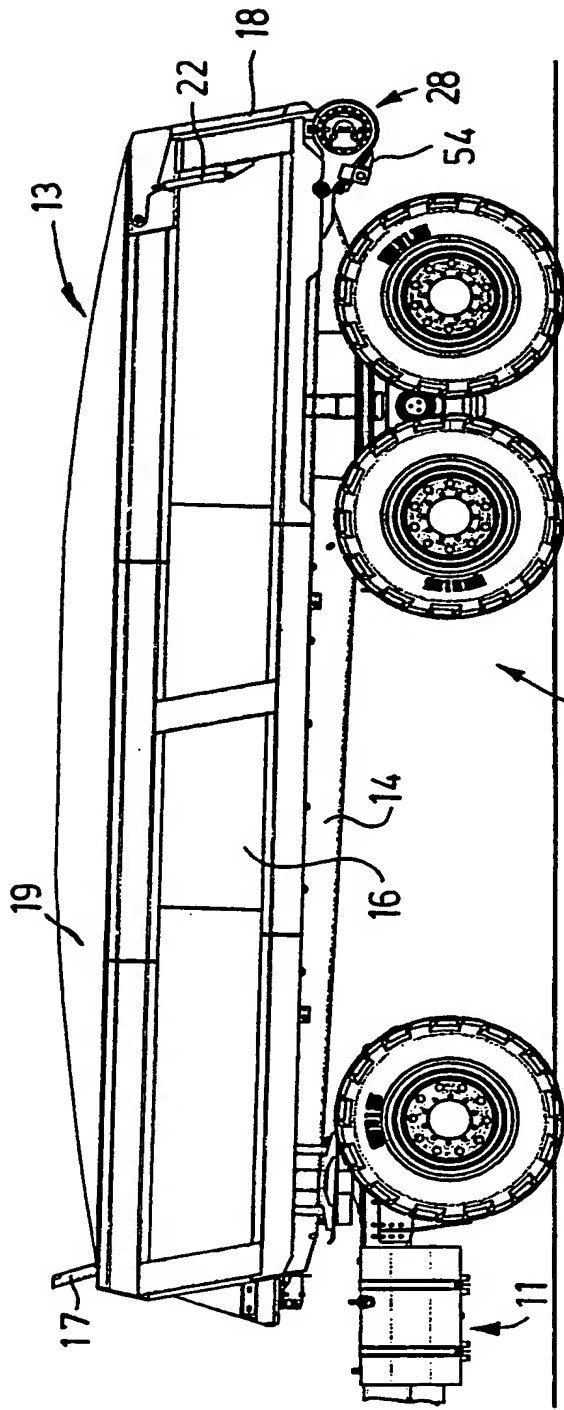


Fig. 1

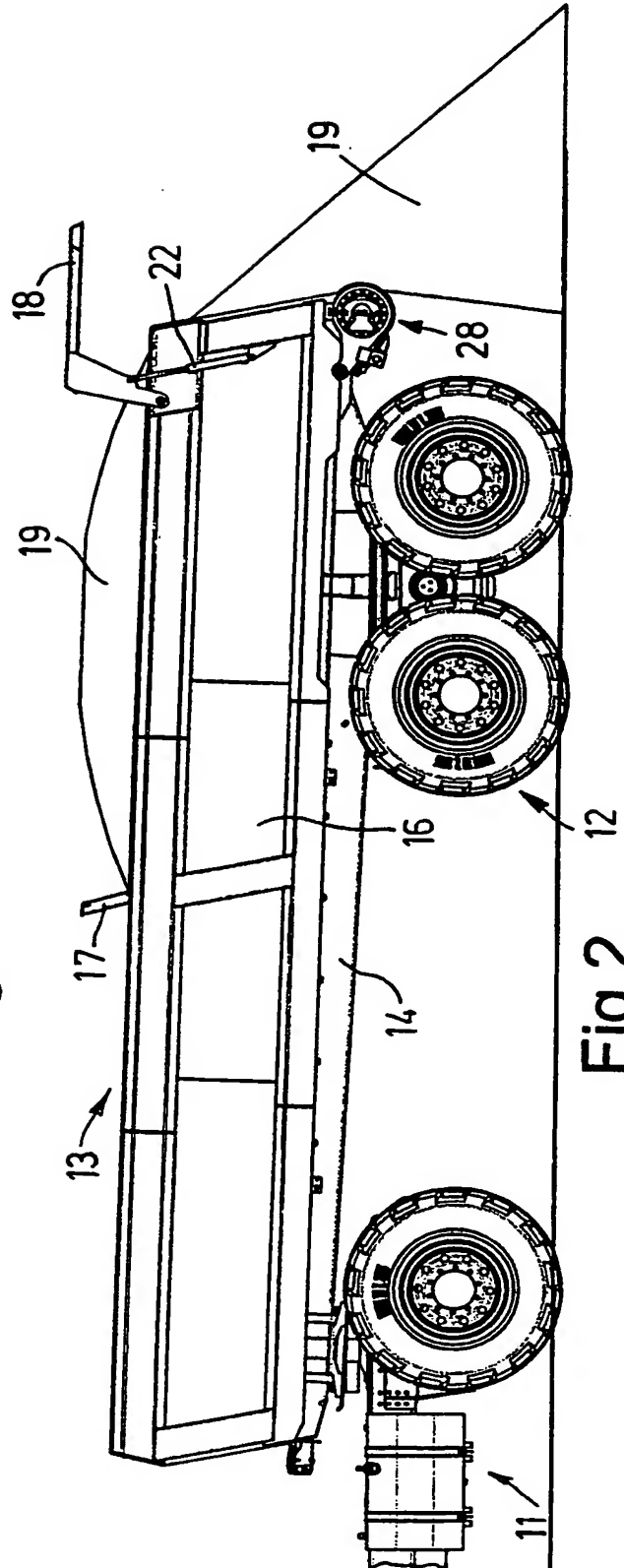
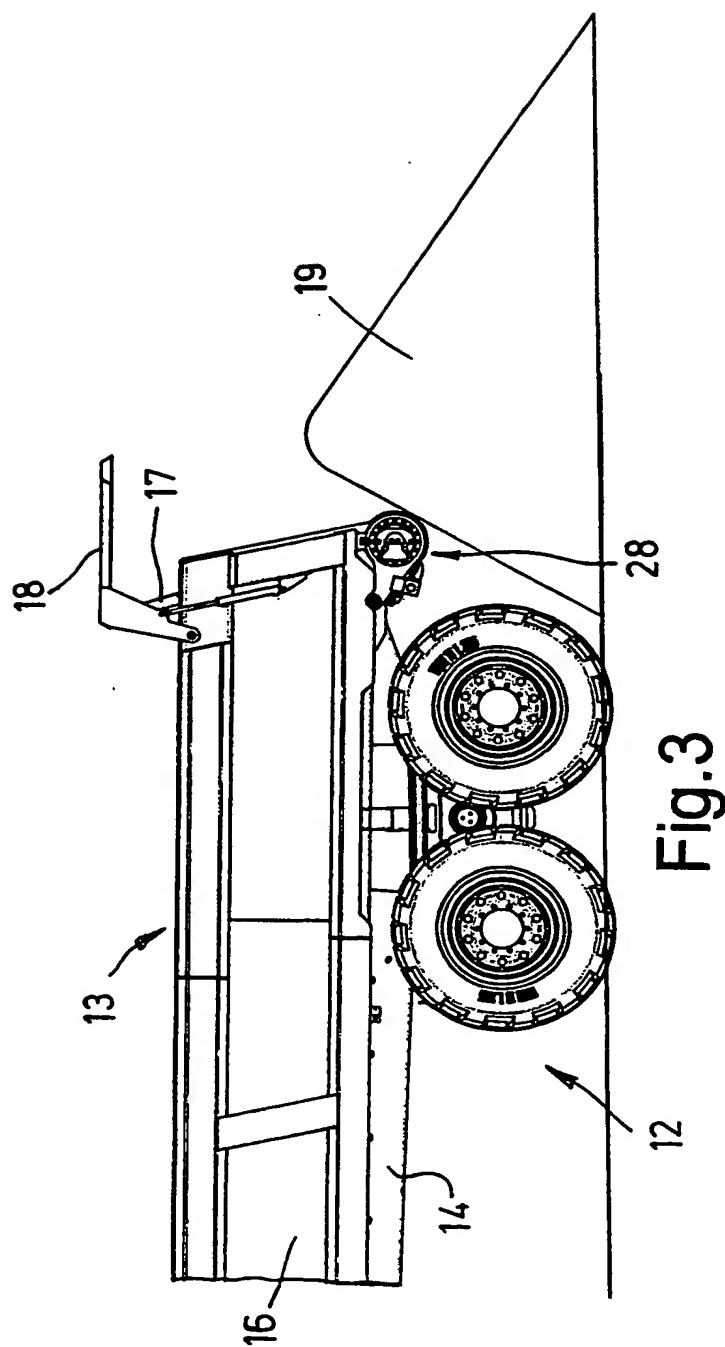


Fig. 2

2/11



3/11

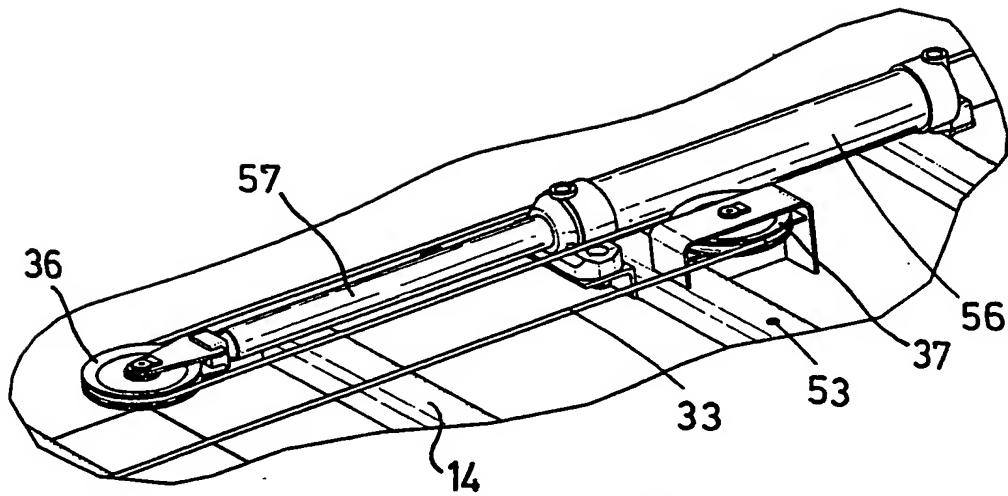


Fig.4c

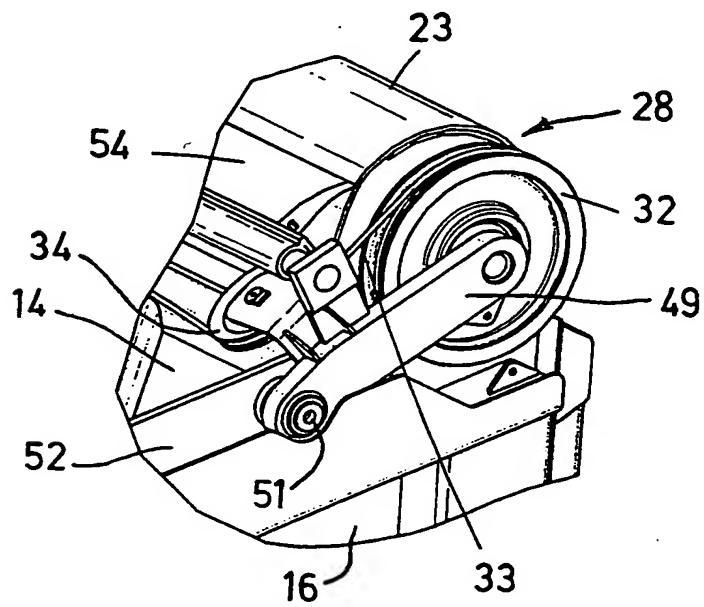


Fig.4d

4/11

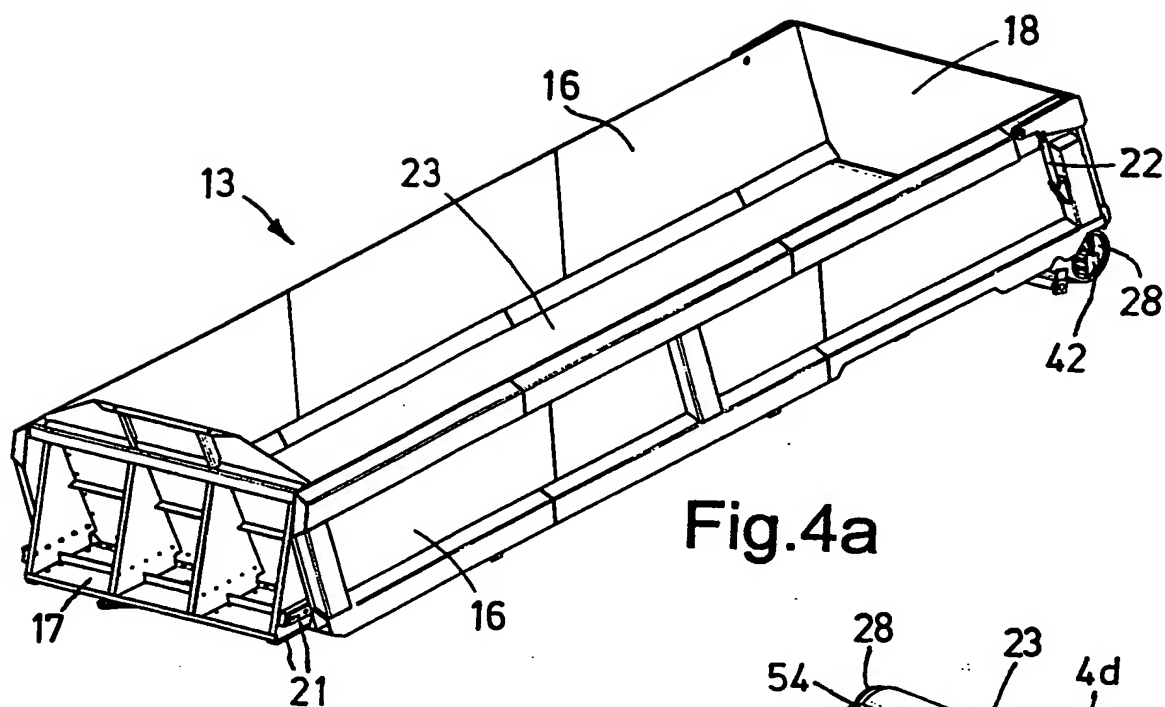


Fig.4a

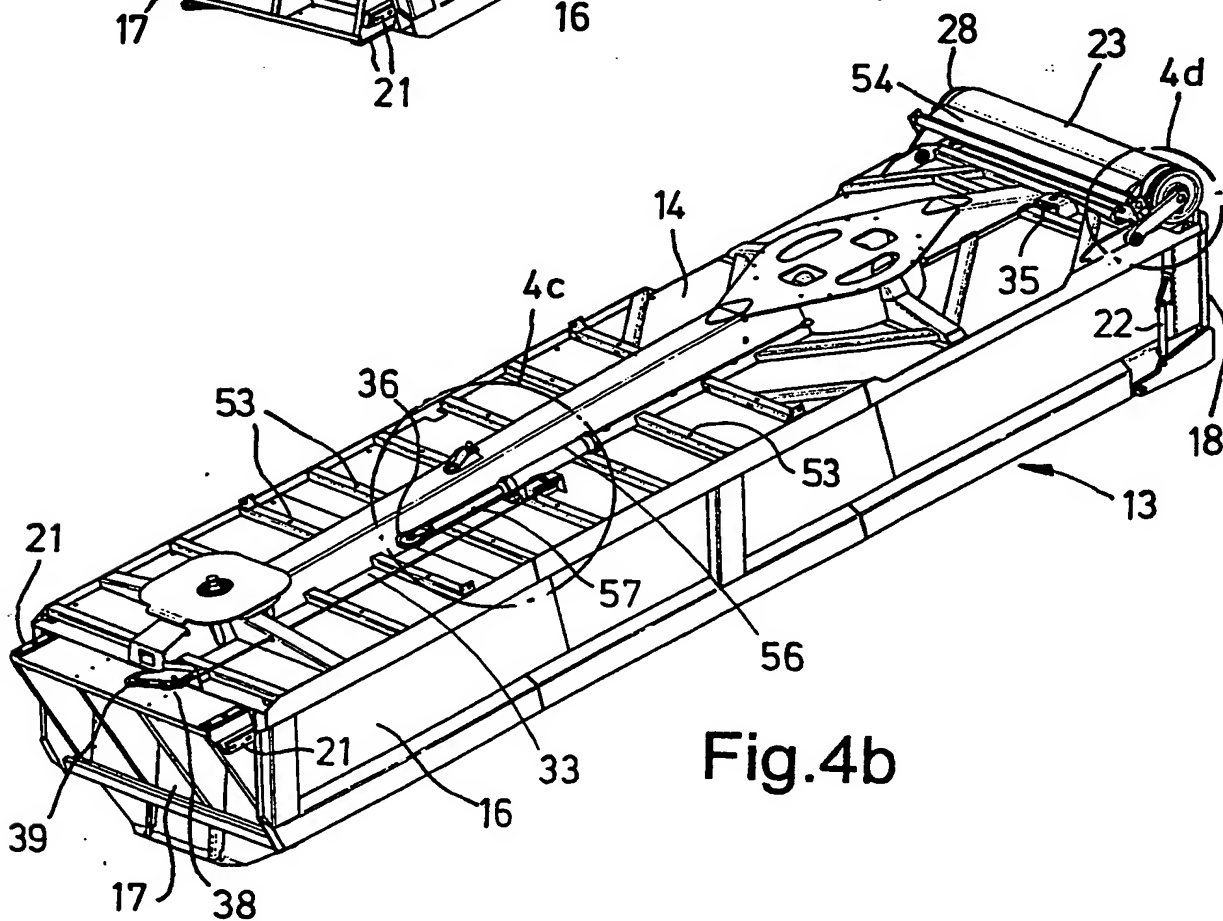
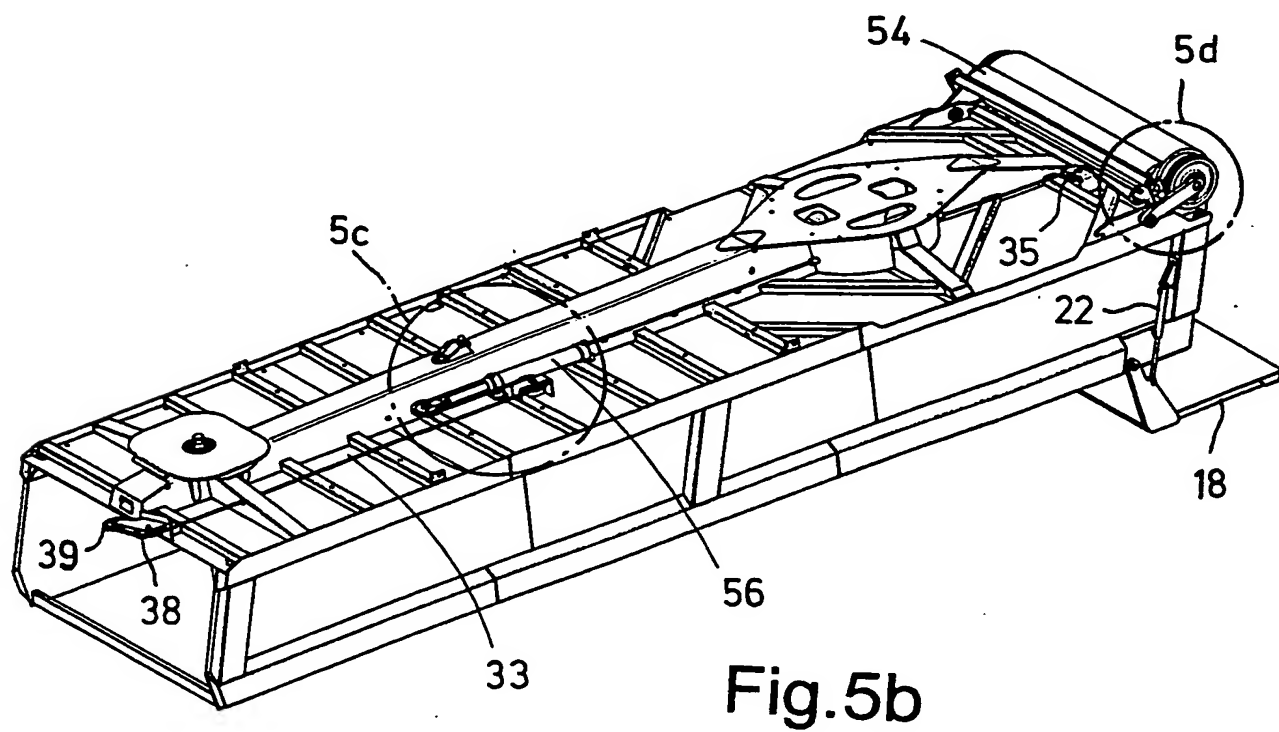
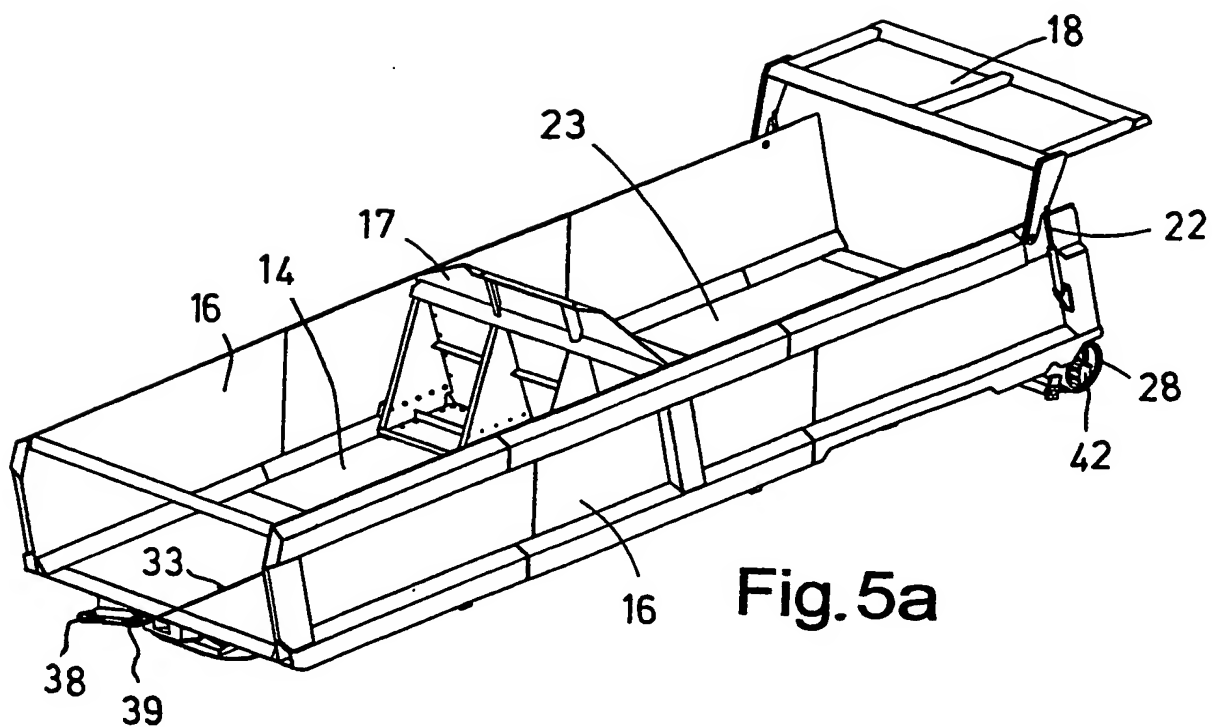


Fig.4b



5/11



6/11

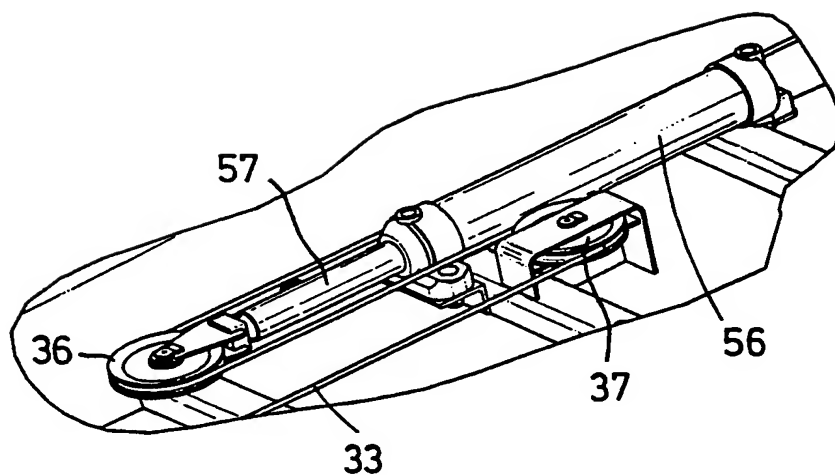


Fig.5c

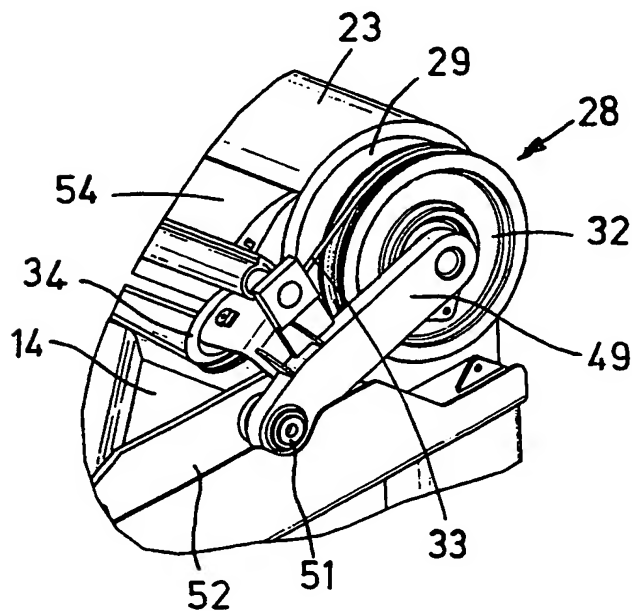
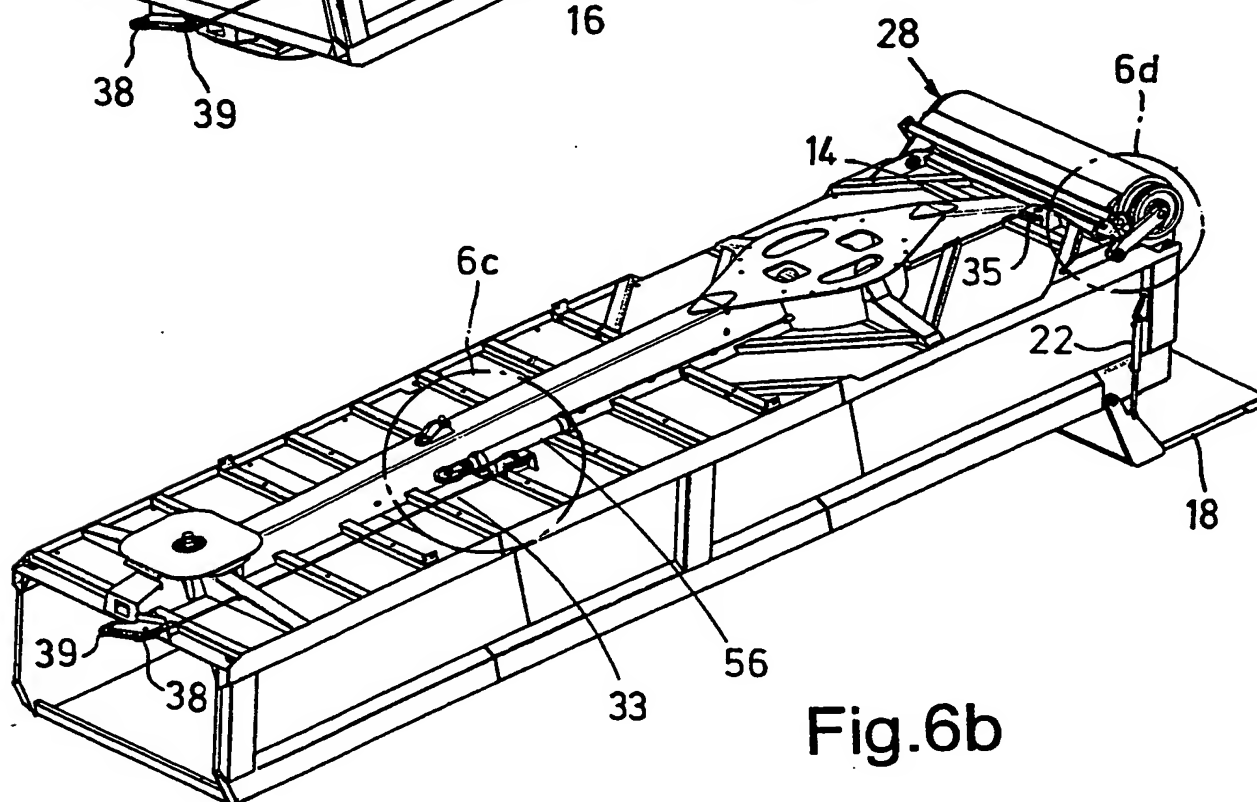
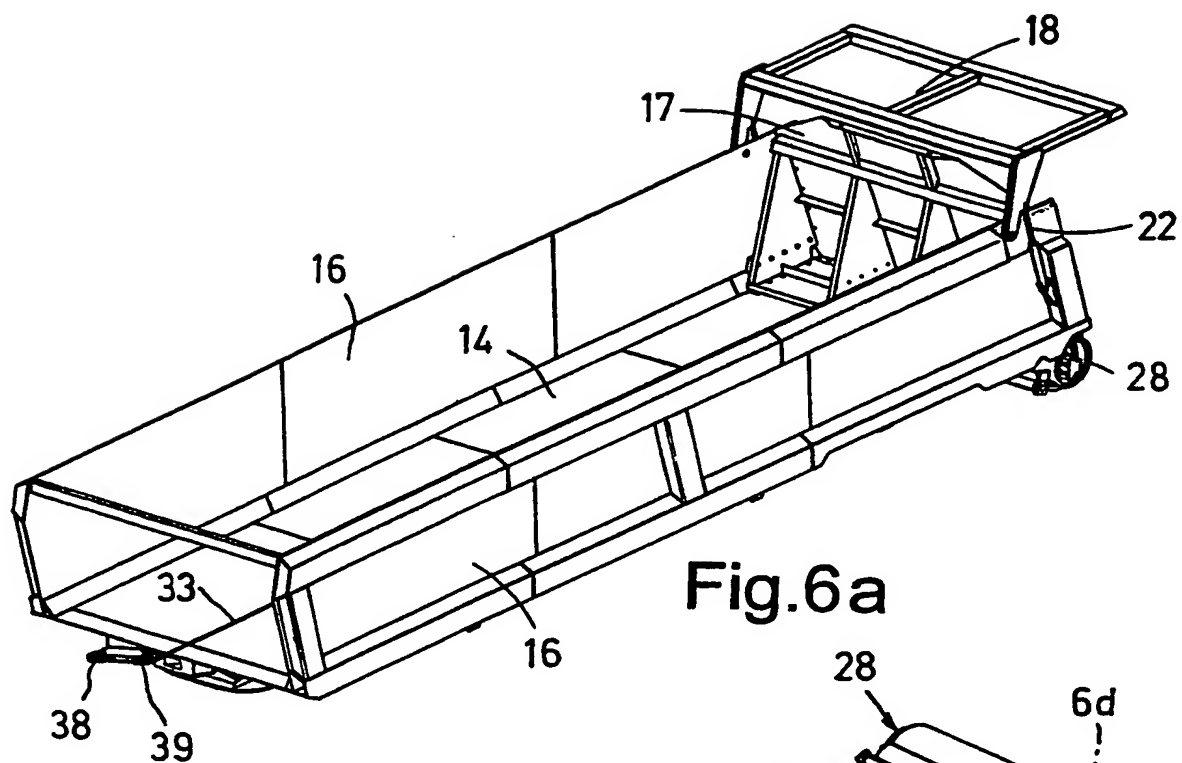


Fig.5d

7/11



8/11

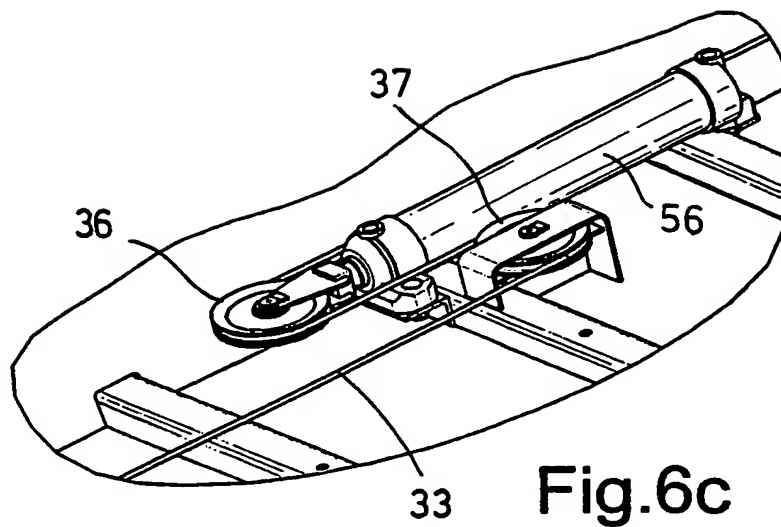


Fig. 6c

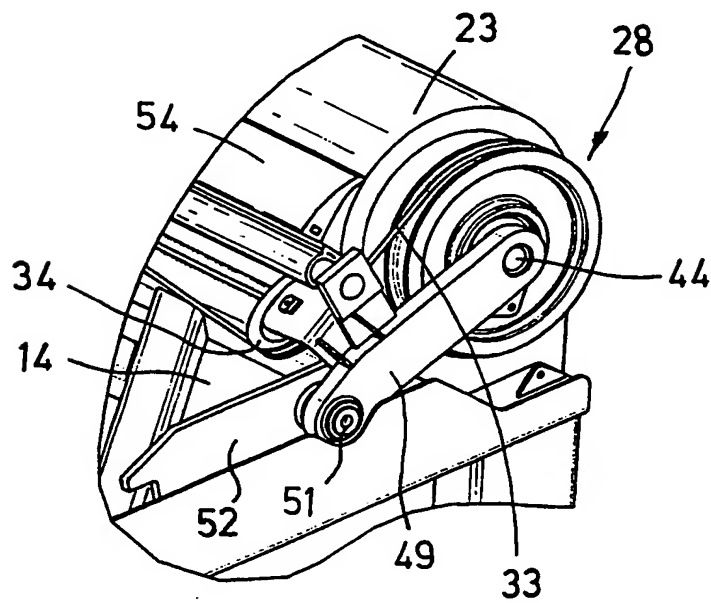


Fig. 6d

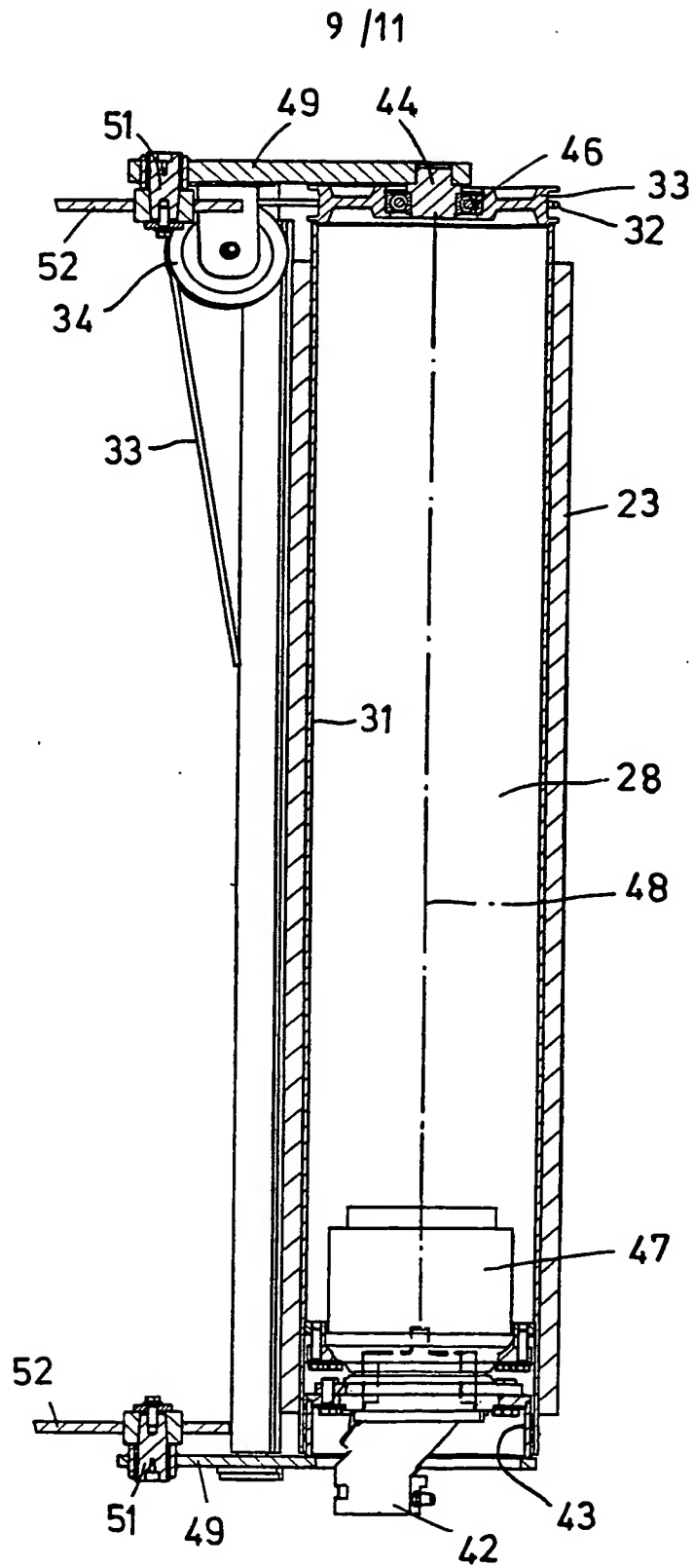


Fig.7

10/11

Fig.8

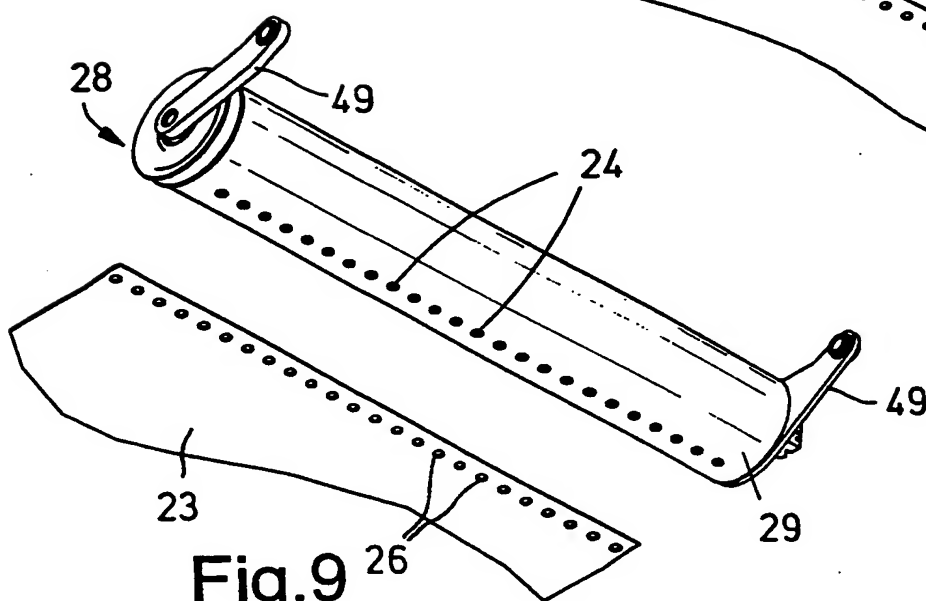
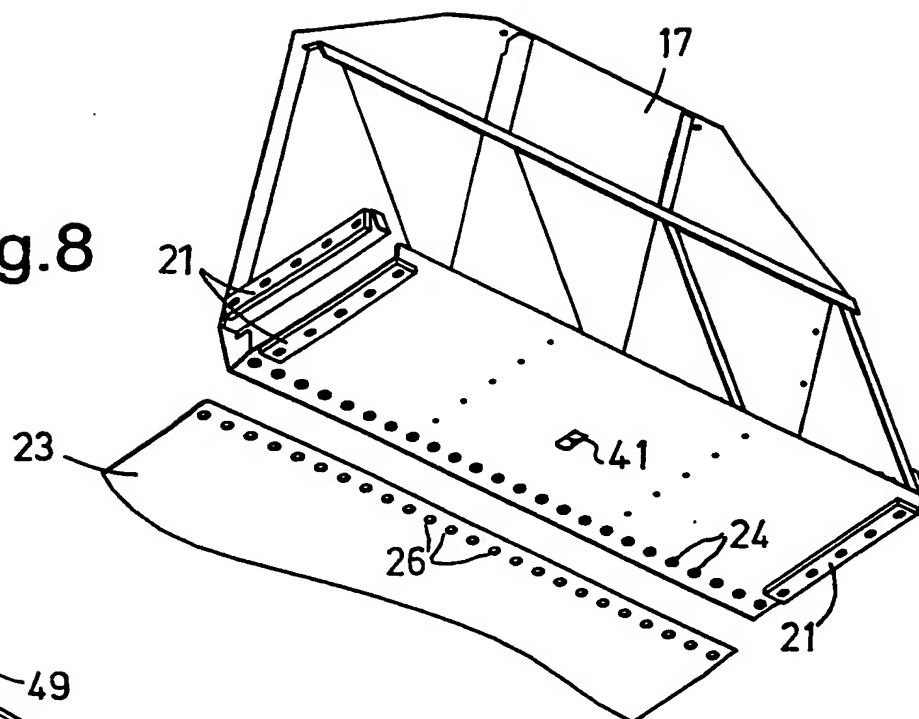
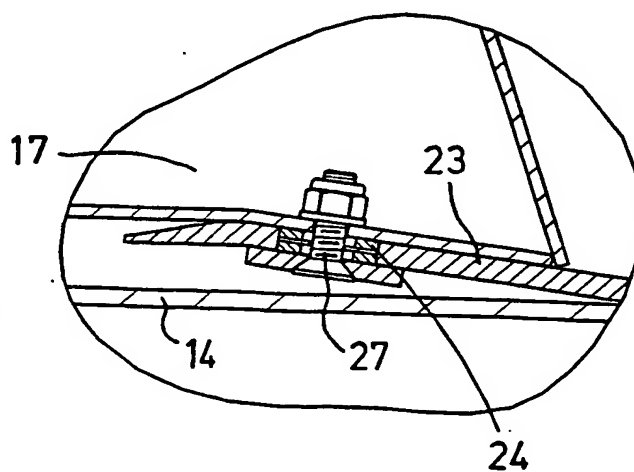


Fig.9

Fig.10



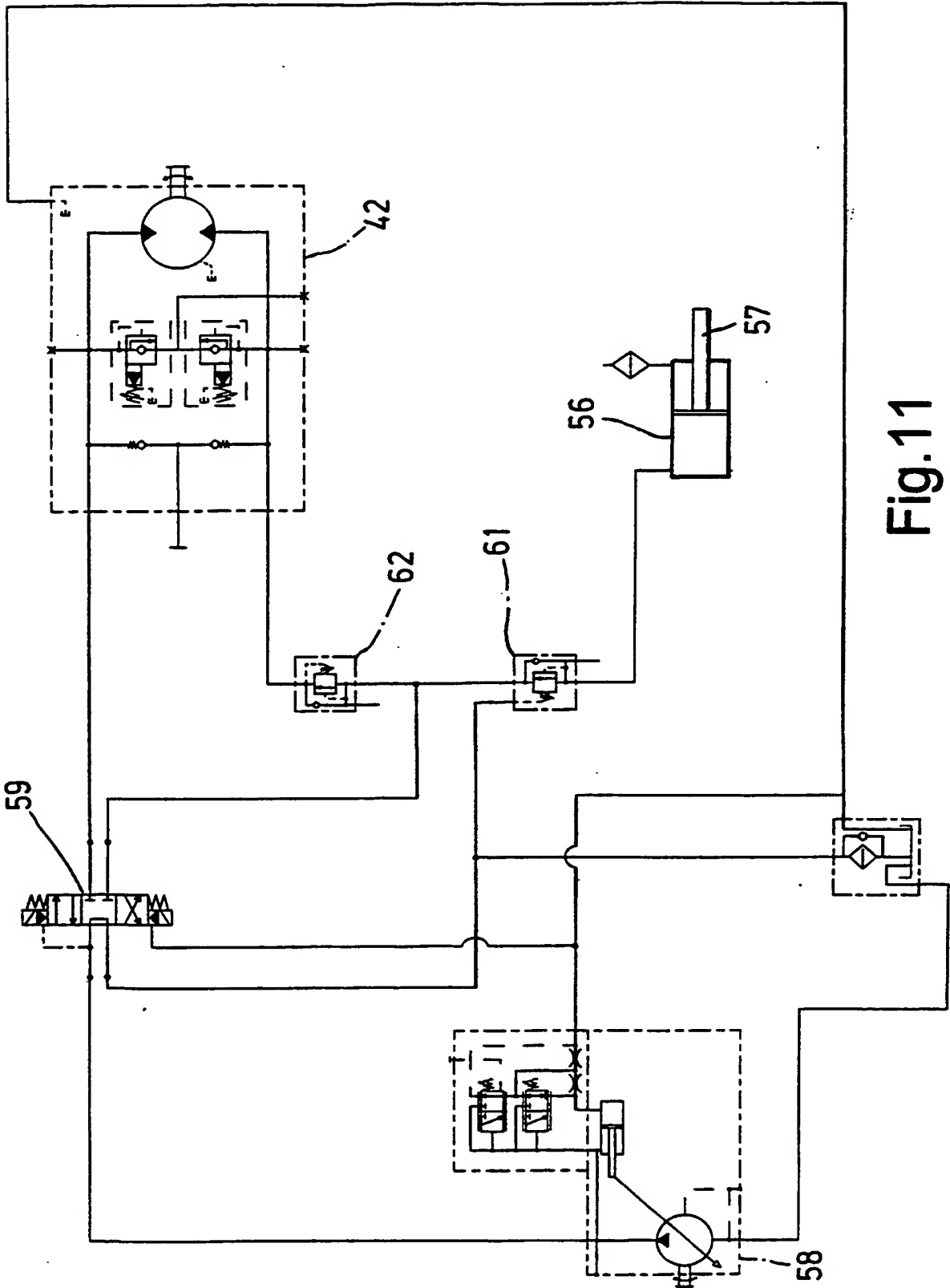


Fig.11

# INTERNATIONAL SEARCH REPORT

Int. Application No

PCT/GB 00/02277

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B60P1/38

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B60P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 343 518 A (KLÖCKNER) 29 November 1989 (1989-11-29) column 4, line 33 - column 5, line 52; figures 3,4	1
Y	GB 419 351 A (SHELVOKE AND DREWRY) page 1, line 14 - line 98; figures	1
A	US 3 704 798 A (CARPENTURE, JR. ET AL.) 5 December 1972 (1972-12-05) column 1, line 34 - line 53 column 5, line 13 - line 52; figures 7-10	1
A	EP 0 081 695 A (SCHÜCHEN) 22 June 1983 (1983-06-22) abstract; figures 1-8	1
	-/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

19 September 2000

Date of mailing of the international search report

28/09/2000

Name and mailing address of the ISA

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Nordlund, J



# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/02277

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 027 409 A (SOCIETE DES ETABLISSEMENTS THEVENON) 22 April 1981 (1981-04-22) page 7, line 3 - line 24; figure 7 ---	2
A	PATENT ABSTRACTS OF JAPAN vol. 010, no. 167 (M-488), 13 June 1986 (1986-06-13) & JP 61 018531 A (KYOKUTO KAIHATSU KOGYO KK), 27 January 1986 (1986-01-27) abstract ---	3,4,6
A	EP 0 360 235 A (WAGNER) 28 March 1990 (1990-03-28) column 4, line 17 - line 46; figure 2 -----	3,4

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/02277

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 343518 A	29-11-1989	DE 3817887 A	07-12-1989
GB 419351 A		NONE	
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		AT 90043 T	15-06-1993
		DE 58904557 D	08-07-1993

IPEA/ EP 15 JANUARY 2001

## CHAPTER II

under Article 31 of the Patent Cooperation Treaty:  
The undersigned requests that the international application specified below be the subject of  
international preliminary examination according to the Patent Cooperation Treaty and  
hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
<b>Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION</b>	
International application No. PCT/GB00/02277	International filing date (day/month/year) 13 June 2000 (13/06/00)
Applicant's or agent's file reference WPP80667	
(Earliest) Priority date (day/month/year) 15 June 1999 (15/06/99)	
Title of invention Load Carrying Body	
<b>Box No. II APPLICANT(S)</b>	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Multidrive Limited Thirsk Industrial Park York Road, Thirsk Yorkshire YO7 3BX United Kingdom	
Telephone No.:	
Facsimile No.:	
Teleprinter No.:	
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Brown, David John Bowes Ravensthorpe Manor Boltby Thirsk Yorkshire YO7 2DX UNited Kingdom	
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
State (that is, country) of nationality:	
State (that is, country) of residence:	
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.	

**Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**The following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation.  
The address must include postal code and name of country.)*Godwin, Edgar James  
Marks & Clerk  
57-60 Lincoln's Inn Fields  
London WC2A 3LS  
United Kingdom

Telephone No.:

020 7400 3000

Facsimile No.:

020 7404 4910

Teleprinter No.:

25311 EMANDC G

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:\***

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filedthe description ☐ as originally filed☐ as amended under Article 34the claims ☐ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☐ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

\* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: ENGLISH☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

**Box No. VI CHECK LIST**

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- |  |   |        |
|--|---|--------|
| 1. translation of international application                              | : | sheets |
| 2. amendments under Article 34   | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19  | : | sheets |
| 5. letter  | : | sheets |
| 6. other ( <i>specify</i> )  | : | sheets |

For International Preliminary  
Examining Authority use only

received not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet                             | 4. <input type="checkbox"/> statement explaining lack of signature                                  |
| 2. <input type="checkbox"/> separate signed power of attorney                            | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input type="checkbox"/> other ( <i>specify</i> ):   |

**Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).



Godwin, Edgar James

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.

☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum) WPP80667

<b>Box No. I TITLE OF INVENTION</b>	
Load Carrying Body	
<b>Box No. II APPLICANT</b>	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Multidrive Limited Thirsk Industrial Park York Road Thirsk Yorkshire YO7 3BX United Kingdom	
<input type="checkbox"/> This person is also inventor.	
Telephone No.	
Facsimile No.	
Teleprinter No.	
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<b>Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)</b>	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Brown, David John Bowes Ravensthorpe Manor Boltby Thirsk Yorkshire YO7 2DX United Kingdom	
This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)	
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
<b>Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE</b>	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Godwin, Edgar James Marks & Clerk 57-60 Lincoln's Inn Fields London WC2A 3LS United Kingdom	
Telephone No.	
020-7400-3000	
Facsimile No.	
020-7404-4910	
Teleprinter No.	
25311 EMANDC G	
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

## Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes: at least one must be marked):

## Regional Patent

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line) .....

## National Patent (if other kind of protection or treatment desired, specify on dotted line):

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates                  | <input checked="" type="checkbox"/> LR Liberia                                   |
| <input checked="" type="checkbox"/> AL Albania                               | <input checked="" type="checkbox"/> LS Lesotho                                   |
| <input checked="" type="checkbox"/> AM Armenia                               | <input checked="" type="checkbox"/> LT Lithuania                                 |
| <input checked="" type="checkbox"/> AT Austria                               | <input checked="" type="checkbox"/> LU Luxembourg                                |
| <input checked="" type="checkbox"/> AU Australia                             | <input checked="" type="checkbox"/> LV Latvia                                    |
| <input checked="" type="checkbox"/> AZ Azerbaijan                            | <input checked="" type="checkbox"/> MA Morocco                                   |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina                | <input checked="" type="checkbox"/> MD Republic of Moldova                       |
| <input checked="" type="checkbox"/> BB Barbados                              | <input checked="" type="checkbox"/> MG Madagascar                                |
| <input checked="" type="checkbox"/> BG Bulgaria                              | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil                                | <input checked="" type="checkbox"/> MN Mongolia                                  |
| <input checked="" type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MW Malawi                                    |
| <input checked="" type="checkbox"/> CA Canada                                | <input checked="" type="checkbox"/> MX Mexico                                    |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> NO Norway                                    |
| <input checked="" type="checkbox"/> CN China                                 | <input checked="" type="checkbox"/> NZ New Zealand                               |
| <input checked="" type="checkbox"/> CR Costa Rica                            | <input checked="" type="checkbox"/> PL Poland                                    |
| <input checked="" type="checkbox"/> CU Cuba                                  | <input checked="" type="checkbox"/> PT Portugal                                  |
| <input checked="" type="checkbox"/> CZ Czech Republic                        | <input checked="" type="checkbox"/> RO Romania                                   |
| <input checked="" type="checkbox"/> DE Germany                               | <input checked="" type="checkbox"/> RU Russian Federation                        |
| <input checked="" type="checkbox"/> DK Denmark                               | <input checked="" type="checkbox"/> SD Sudan                                     |
| <input checked="" type="checkbox"/> DM Dominica                              | <input checked="" type="checkbox"/> SE Sweden                                    |
| <input checked="" type="checkbox"/> EE Estonia                               | <input checked="" type="checkbox"/> SG Singapore                                 |
| <input checked="" type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SI Slovenia                                  |
| <input checked="" type="checkbox"/> FI Finland                               | <input checked="" type="checkbox"/> SK Slovakia                                  |
| <input checked="" type="checkbox"/> GB United Kingdom                        | <input checked="" type="checkbox"/> SL Sierra Leone                              |
| <input checked="" type="checkbox"/> GD Grenada                               | <input checked="" type="checkbox"/> TJ Tajikistan                                |
| <input checked="" type="checkbox"/> GE Georgia                               | <input checked="" type="checkbox"/> TM Turkmenistan                              |
| <input checked="" type="checkbox"/> GH Ghana                                 | <input checked="" type="checkbox"/> TR Turkey                                    |
| <input checked="" type="checkbox"/> GM Gambia                                | <input checked="" type="checkbox"/> TT Trinidad and Tobago                       |
| <input checked="" type="checkbox"/> HR Croatia                               | <input checked="" type="checkbox"/> TZ United Republic of Tanzania               |
| <input checked="" type="checkbox"/> HU Hungary                               | <input checked="" type="checkbox"/> UA Ukraine                                   |
| <input checked="" type="checkbox"/> ID Indonesia                             | <input checked="" type="checkbox"/> UG Uganda                                    |
| <input checked="" type="checkbox"/> IL Israel                                | <input checked="" type="checkbox"/> US United States of America                  |
| <input checked="" type="checkbox"/> IN India                                 | <input checked="" type="checkbox"/> UZ Uzbekistan                                |
| <input checked="" type="checkbox"/> IS Iceland                               | <input checked="" type="checkbox"/> VN Viet Nam                                  |
| <input checked="" type="checkbox"/> JP Japan                                 | <input checked="" type="checkbox"/> YU Yugoslavia                                |
| <input checked="" type="checkbox"/> KE Kenya                                 | <input checked="" type="checkbox"/> ZA South Africa                              |
| <input checked="" type="checkbox"/> KG Kyrgyzstan                            | <input checked="" type="checkbox"/> ZW Zimbabwe                                  |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea |  |
| <input checked="" type="checkbox"/> KR Republic of Korea                     |  |
| <input checked="" type="checkbox"/> KZ Kazakhstan                            |  |
| <input checked="" type="checkbox"/> LC Saint Lucia                           |  |
| <input checked="" type="checkbox"/> LK Sri Lanka                             |  |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☐ Plus any other PCT contracting state
- ☐ not listed above or on page 8

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

**Supplemental Box**
*If the Supplemental Box is not used, this sheet should not be included in the request.*

1. If, in any of the Boxes, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No. ..." [indicate the number of the Box] and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:

- (i) if more than two persons are involved as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;
- (ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;
- (iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;
- (iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;
- (v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;
- (vi) if, in Box No. VI, there are more than three earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI;
- (vii) if, in Box No. VI, the earlier application is an ARIPO application: in such case, write "Continuation of Box No. VI", specify the number of the item corresponding to that earlier application and indicate at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed.

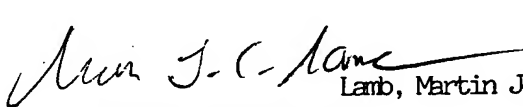
2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write "Designation(s) excluded from precautionary designation statement" and indicate the name or two-letter code of each State so excluded.

3. If the applicant claims, in respect of any designated Office, the benefits of provisions of the national law concerning non-prejudicial disclosures or exceptions to lack of novelty: in such case, write "Statement concerning non-prejudicial disclosures or exceptions to lack of novelty" and furnish that statement below.

**Continuation of Box V - Designation of States**

DZ - Algeria  
 AG - Antigua & Barbuda  
 MZ - Mozambique



<b>Box No. VI PRIORITY CLAIM</b>		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1) 15 Jun 99 (15.06.1999)	9913952.9	United Kingdom		
item (2)				
item (3)				
<input checked="" type="checkbox"/> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): 1				
<small>* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.</small>				
<b>Box No. VII INTERNATIONAL SEARCHING AUTHORITY</b>				
<b>Choice of International Searching Authority (ISA)</b> <small>(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):</small> ISA /		<b>Request to use results of earlier search; reference to that search</b> (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year)      Number      Country (or regional Office)		
<b>Box No. VIII CHECK LIST; LANGUAGE OF FILING</b>				
This international application contains the following number of sheets: request : 4 description (excluding sequence listing part) : 6 claims : 3 abstract : 1 drawings : 11 sequence listing part of description : Total number of sheets : 25		This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input checked="" type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input checked="" type="checkbox"/> other (specify): Form 23/77		
Figure of the drawings which should accompany the abstract: 4b		Language of filing of the international application: English		
<b>Box No. IX SIGNATURE OF APPLICANT OR AGENT</b>				
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).				
 on behalf of      Godwin, Edgar James      Lamb, Martin John Carstairs				

For receiving Office use only	
1. Date of actual receipt of the purported international application: 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: 4. Date of timely receipt of the required corrections under PCT Article 11(2): 5. International Searching Authority (if two or more are competent): ISA /	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

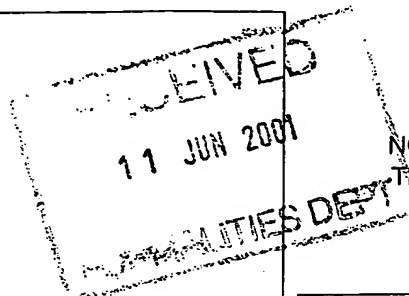
For International Bureau use only
Date of receipt of the record copy by the International Bureau:

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

GODWIN, Edgar James  
MARKS & CLERK  
57-60 Lincoln's Inn Fields  
London WC2A 3LS  
GRANDE BRETAGNE



## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)

Date of mailing  
(day/month/year) 07.06.2001

Applicant's or agent's file reference  
WPP80667

### IMPORTANT NOTIFICATION

International application No.  
PCT/GB00/02277

International filing date (day/month/year)  
13/06/2000

Priority date (day/month/year)  
15/06/1999

Applicant  
MULTIDRIVE LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer

Ikonen, T  
Tel. +49 89 2399-7965



# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>WPP80667</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/GB00/02277</b>	International filing date (day/month/year) <b>13/06/2000</b>	Priority date (day/month/year) <b>15/06/1999</b>
International Patent Classification (IPC) or national classification and IPC <b>B60P1/38</b>		
Applicant <b>MULTIDRIVE LIMITED et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>15/01/2001</b>	Date of completion of this report  <b>07.06.2001</b>
Name and mailing address of the international preliminary examining authority:   <b>European Patent Office</b> <b>D-80298 Munich</b> <b>Tel. +49 89 2399 - 0 Tx: 523656 epmu d</b> <b>Fax: +49 89 2399 - 4465</b>	Authorized officer  <b>Stelzer, W</b>  <b>Telephone No. +49 89 2399 8872</b>



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02277

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-6 as originally filed

**Claims, No.:**

1-11 as originally filed

**Drawings, sheets:**

1/11-11/11 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02277

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	2-11
	No:	Claims	1
Inventive step (IS)	Yes:	Claims	2-11
	No:	Claims	1
Industrial applicability (IA)	Yes:	Claims	1-11
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/02277

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Having taken note of applicant's remarks in his letter of reply dated 16 May 2001, the examining authority is still of the opinion that the present application does not meet the requirements of Article 33 (2) PCT, because the subject-matter of claim 1 is not new.

Document GB 419 351 A (SHELVOKE AND DREWRY) is regarded as being the closest prior art to the subject-matter of claim 1, and discloses:

A load carrying body for a vehicle comprising the features as listed under

(a) - (f) in present independent claim 1:

(a): see description ("refuse collection vehicle")

(b): Fig. 1, part "16"

(c): Fig. 2, left end of chassis

(d): Fig. 1 and resp. parts of description

(e): Fig. 1; 3<sup>rd</sup> paragraph of description

**(f): Fig. 2; page 1, lines 38 - 62 referring to the compensation device**

In particular, the wording of claim 1 can be read on GB 419 351 A even if there may be some differences having regard of the embodiment displayed in the figures or described in the description.

**Re Item VII**

**Certain defects in the international application**

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB00/02277

6.3(b)(ii) PCT).

The applicant has however not provided reasons why the claim should not be in the two-part form.

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

To meet the requirements of Rule 5.1 (a) (i) PCT the technical field should have been expressed in terms of the preamble of any independent claim.

To meet the requirements of Rule 5.1 (a) (iii) PCT the description should disclose the invention (...) in such terms that the technical problem and its solution can be understood; and this in the usual way, i.e. to the extent of the described particular embodiment, but in general terms without referring to examples by use of reference signs.

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>WPP80667</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/ 02277</b>	International filing date (day/month/year) <b>13/06/2000</b>	(Earliest) Priority Date (day/month/year) <b>15/06/1999</b>
Applicant <b>MULTIDRIVE LIMITED</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

4 b



None of the figures.



# INTERNATIONAL SEARCH REPORT

International application No.

PCT/GB 00/ 02277

## Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

A floor constituted by a flexible belt (23), resting on the upper surface of a loadbearing base, has one end connected to a headboard (17) and the other end connected to a winch (28).

A cable (33) has one end connected to the headboard and the other end connected to the winch.

A guide system for the cable including a compensating mechanism (36,56,57) which varies the path of the cable during rotation of the winch, so as to compensate for a difference between the belt diameter and the cable diameter on the winch, the difference varying as the belt is wound and unwound.

# INTERNATIONAL SEARCH REPORT

Int. ational Application No

PCT/GB 00/02277

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B60P1/38

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B60P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 343 518 A (KLÖCKNER) 29 November 1989 (1989-11-29) column 4, line 33 -column 5, line 52; figures 3,4 ---	1
Y	GB 419 351 A (SHELVOKE AND DREWRY) page 1, line 14 - line 98; figures ---	1
A	US 3 704 798 A (CARPENTURE, JR. ET AL) 5 December 1972 (1972-12-05) column 1, line 34 - line 53 column 5, line 13 - line 52; figures 7-10 ---	1
A	EP 0 081 695 A (SCHÜCHEN) 22 June 1983 (1983-06-22) abstract; figures 1-8 ---	1
-/--		



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

19 September 2000

Date of mailing of the international search report

28/09/2000

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Authorized officer

Nordlund, J

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/02277

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 027 409 A (SOCIETE DES ETABLISSEMENTS THEVENON) 22 April 1981 (1981-04-22) page 7, line 3 - line 24; figure 7 ----	2
A	PATENT ABSTRACTS OF JAPAN vol. 010, no. 167 (M-488), 13 June 1986 (1986-06-13) & JP 61 018531 A (KYOKUTO KAIHATSU KOGYO KK), 27 January 1986 (1986-01-27) abstract ----	3,4,6
A	EP 0 360 235 A (WAGNER) 28 March 1990 (1990-03-28) column 4, line 17 - line 46; figure 2 -----	3,4

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/02277

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 343518 A	29-11-1989	DE 3817887 A	07-12-1989
GB 419351 A		NONE	
US 3704798 A	05-12-1972	NONE	
EP 81695 A	22-06-1983	NL 8105629 A AT 40537 T DE 3279415 D	01-07-1983 15-02-1989 09-03-1989
EP 27409 A	22-04-1981	FR 2467106 A	17-04-1981
JP 61018531 A	27-01-1986	NONE	
EP 360235 A	28-03-1990	DE 3920286 A AT 90043 T DE 58904557 D	29-03-1990 15-06-1993 08-07-1993